

Monthly Activity Report

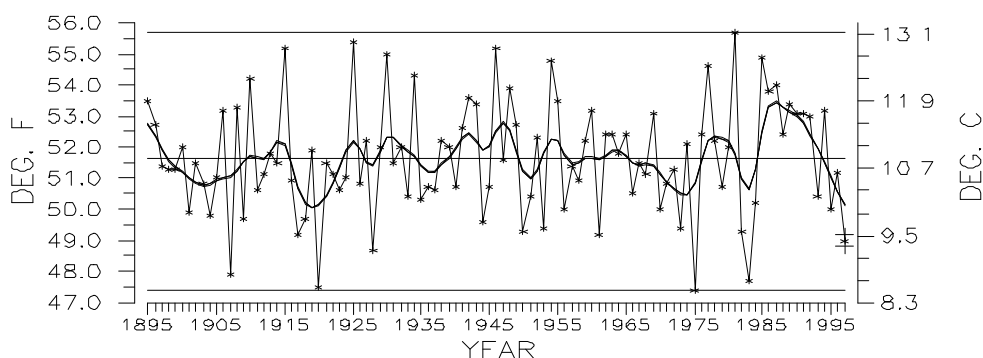
April 1997

National Climatic Data Center

A National Resource for
Climate Information



U.S. NATIONAL TEMPERATURE
APRIL, 1895-1997



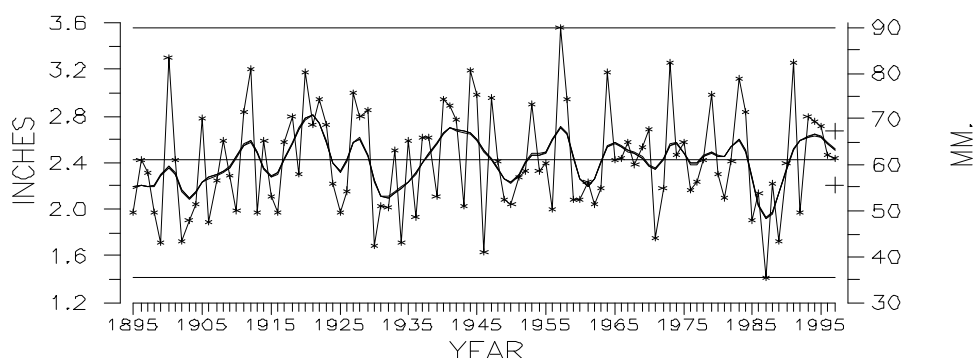
National Climatic Data Center, NOAA

STRAIGHT HORIZONTAL LINES ARE
MAXIMUM VALUE (TOP),
LONG-TERM AVERAGE (MIDDLE),
MINIMUM VALUE (BOTTOM)

THICK SMOOTH CURVE
IS 9-POINT BINOMIAL
FILTER.

CONFIDENCE INTERVAL
FOR CURRENT YEAR IS
INDICATED BY '+'.
+.

U.S. NATIONAL PRECIPITATION
APRIL, 1895-1997



National Climatic Data Center, NOAA

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Preliminary data for April 1997 indicate that temperature averaged across the contiguous United States was much below the long-term-mean ranking as the sixth coolest April since 1895 (Top Figure). Thirty-nine percent of the country was much cooler than normal while none of the country was much warmer than normal.

April 1997 was the 45th wettest such month since 1895 (Bottom Figure). Ten percent of the country experienced much wetter than normal conditions while about 12 percent of the country was much drier than normal.

DIRECTOR'S HIGHLIGHTS

On-Line Ordering System Completes First Order!

April 1997 brought an historical event to NCDC. The first-ever automated order was placed and paid for by credit card through the NCDC On-Line Ordering System (NOLOS) via the World Wide Web. Two CD-ROMs were ordered by a consulting firm in Texas. The order was automatically processed through NCDC's Customer Order Servicing & Tracking (COST) system with no human intervention whatsoever. The only action required at NCDC was to pull the CDs from the shelf and ship them to the user. The new system also includes the capability for web users to check the status of their COST orders, regardless of how the order was placed. Currently customers can only order NCDC's compact disks using the NOLOS, however, additional products will be available in the near future.

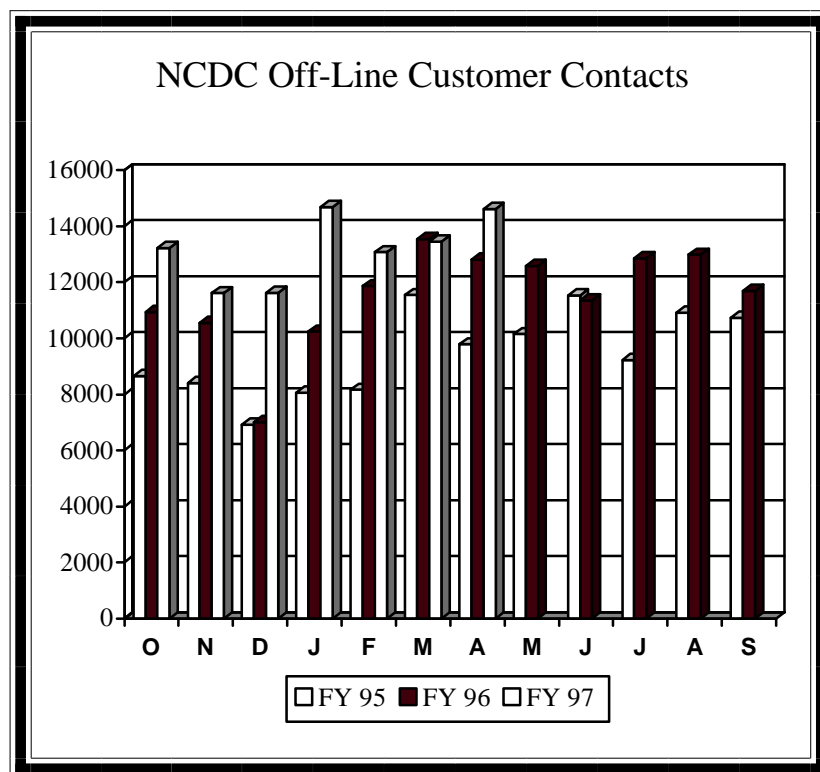
Activity Report Available On-Line

The NCDC's monthly activity reports are now available on-line at <http://www.ncdc.noaa.gov/about/activityreports/activityreports.html>. A link to download a free copy of the Adobe Acrobat Portable

Document Format Reader that is required to view and print the reports can also be found on the report page. May 1997 is the last NCDC activity report that will be distributed in hard copy. If you do not have access to the Internet and wish to continue receiving the report, please call Terri Esham at (704) 271-4238.

New April Records Set in Customer Service

April 1997 customer service operations set a new April record of 14,625 customer transactions, representing a 14 percent increase from April 1996



statistics. The new mark set last month was only 57 short of the all-time record 14,682 transactions set in January 1997. The March outbreak of tornadoes in the mid-south, excessive rainfall and severe flooding in the Ohio Valley, a major spring snowstorm in New England, and the unprecedented flooding in the Dakotas and Minnesota on April 18 were all contributing factors that led to a very active month for customer requests. The evolving shift in customer contact media preference was very evident in the April 1997 statistics. A new record 1,617 electronic mail contacts were received in April 1997 representing a dramatic 74 percent increase over last month's receipts and a 38 percent increase over April 1996 figures. Conversely, both letter contacts and customer telephone calls experienced a three percent decline from April 1996 statistics. It is worth noting that 91 percent of all NCDC customer orders were completed within seven workdays during April 1997.

Overall for the first seven months of FY 97, there was a downward trend in data sales. Sales have decreased by 12 percent this year as compared to last year. Orders were down nine percent while total requests increased by nine percent. Of particular interest were digital sales, which showed a decrease of almost 20 percent. This leads one to believe that many users are now retrieving digital data sets off of NCDC's web site, the SAA, or other web sites at no cost. Also of interest are certification sales. NCDC raised the price of certifications in November. During the last four months, the number of certification requests dropped by 8 percent, though sales increased by 19 percent.

New Policy for Foreign Data Distribution

The National Climatic Data Center (NCDC) has revised its policy regarding foreign data distribution to bring it into compliance with the World Meteorological Organization (WMO) Resolution 40 (Cg-XII). Resolution 40 permits WMO member countries to restrict certain

meteorological and related data and products exchanged under the World Weather Watch Program. The NCDC has implemented measures to remove approximately 15 countries from Climate Visualization (CLIMVIS) and has prepared distribution statements for both on-line and off-line products that contain foreign data. Restricted data has been removed from the on-line system but will still be available off-line. The customer is directed not to sell or provide the data or product for commercial use outside of the United States.

DMSP Data Distribution for EOSDIS

On April 1, 1997, NCDC officially took over the distribution of Defense Meteorological Satellite Program (DMSP) data from the Marshall Space Flight Center Earth Observing System Data and Information System (EOSDIS) Distributed Active Archive Centers. This involves handling requests for both subscription and ad-hoc orders for DMSP data and providing help desk support for users of these data and in support of the Satellite Active Archive. NCDC's Satellite Services Branch received a new IBM RS6000-590 work station to serve as the primary DMSP data processing system. The first shipment of tapes was successfully delivered to customers during the month of April.

Data Rescue Activities

With the film rescue project moving into "routine production", and the Next Generation Weather Radar (NEXRAD) migration system development progressing, attention turned to the rescue of manuscript records. The West Virginia High Technology Consortium Foundation signed a contract with Integrated Data Management, Inc. (IDM) for the scanning of 6.5 million documents by December 1997. The first records to be scanned will be those containing hourly airways observations. In support of this contract, NCDC prepared a delivery order for Orkand to retrieve

and pack these records. The first shipment of some 600 boxes (300,000 records) is scheduled for May 2, 1997.

White House Task Force

Thomas R. Karl, the National Climatic Data Center's Senior Scientist, briefed the newly formed White House Task Force on Climate Change on the contents of the recent article *The Coming Climate* appearing in the May issue of *Scientific American*. The Task Force has a 1-year lifetime to foster a better understanding of the issues around global warming.

Congressional Staff Briefed

Under Secretary of Commerce Ev Ehrlich, the National Climatic Data Center's Senior Scientist, Thomas R. Karl, and the White House Office of Science, Technology, and Policy, briefed a group of Congressional Staff at the request of the Senate Foreign Relations Committee. The briefing focused on the Science of Climate Change and Economic Models for assessing the impacts of various policy options for stabilizing greenhouse gas emissions.

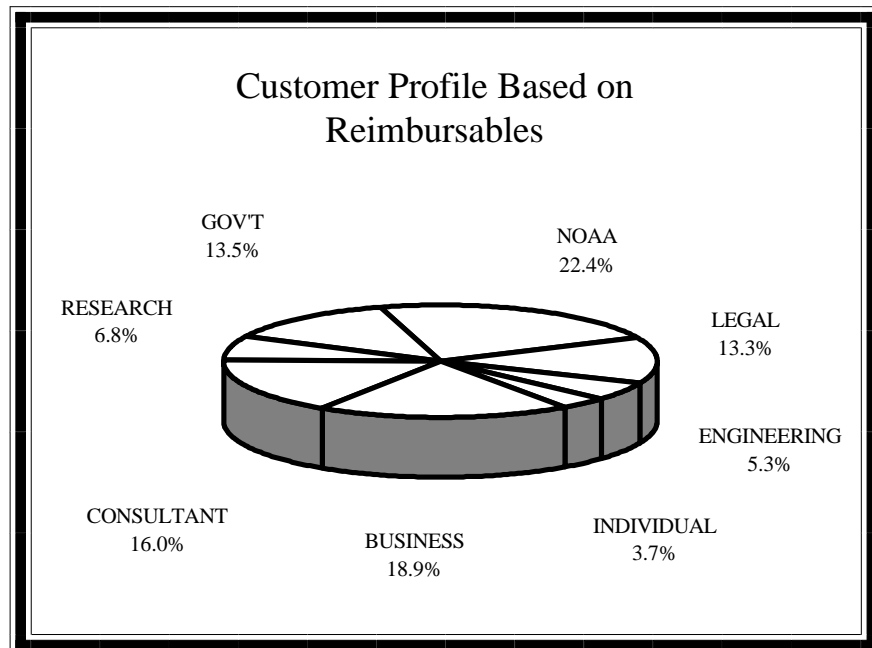
CLIMATE DATA AND INFORMATION SERVICES

♦ Data Base Development

Digital Data Rescue and Migration

As part of the Environment Sciences Data Information Management (ESDIM) data rescue effort, NCDC has performed the following activities:

(1) Archived back-up copies of 92,508 reels of NOAA Polar Orbiter Level 1B data since November 1991. The period of record of this data set is October 1991 thru the present



(operational).

(2) Archived 4,976 gigabytes of NEXRAD Level II radar data on 507 exabyte tapes for the NEXRAD Project.

(3) Archived 38 gigabytes of radar data on 138 NEXRAD Level III disks.

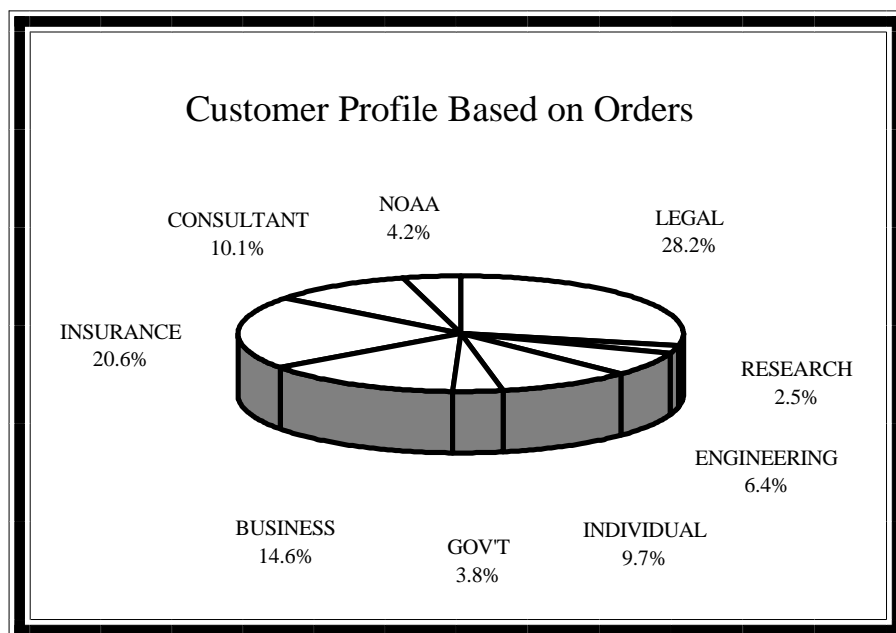
(4) Archived library and back-up copies of NOAA Polar Orbiter Level 1B (TD-3602). The period of record of these data is November 1978 thru March 1985.

We have rescued 21,995 cartridges from a total of 25,440 input cartridges of Level 1B and products. The total rescue project is 86.4 percent completed.

♦ Data and Information Distribution

National Mosaic Reflectivity Images

The Global Energy and Water Cycle Experiment Continental-Scale International Project (GCIP), is providing national mosaic Next Generation Weather Radar (NEXRAD) images to the National Climatic Data Center (NCDC). These images will be accessible to World Wide Web users to browse for locations and times of events for various studies. One image per day is available for April 1995 to April 1997. Wayne Brazille, GCIP, plans to provide hourly images for that same period in the near future. Hourly images are transferred automatically each day and are currently available beginning April 19, 1997.



Normals Data Set

A new normals data set has been added to NCDC's TD9641 digital tape archive. This data set contains 1961-1990 global standard climatological normals for over 4,000 stations worldwide submitted by more than 135 countries and territories. The major parameters that make up this data set consists of: maximum, minimum and mean temperature, precipitation, snowfall, relative humidity, sea level pressure, wind speed and direction, soil temperature, and number of days with weather parameters beyond various threshold values. The statistics include: mean, median, quartiles, extremes, frequency distribution, standard deviation, and number of years with non-missing data. The archive tape contains three files-station metadata, narrative metadata, and normals data. The global standard normals are prepared worldwide once every 30 years.

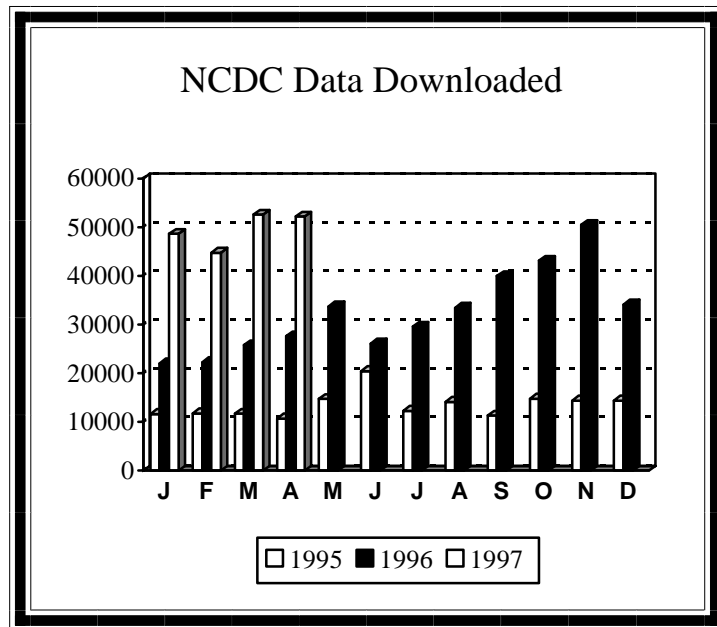
NCDC Releases Northern Plains Flooding

Report on WWW

An NCDC report was put on-line with a satellite photo, narrative information, and climate division drought and precipitation data relating to the recent flooding in the Dakotas and Minnesota. The report presents a visible 1 km image of the Northern Plains taken on April 12, 1997, at 2:57 p.m. CDT. The mainly cloud-free image highlights the numerous rivers across the Northern Plains. The image shows frozen rivers, lakes, and ice jams across portions of the region. The report includes climate division graphics for the Fargo-Grand Forks areas which show the monthly precipitation and Palmer Drought Indices for the area from January 1996 through March 1997. The drought indices generally range from -6 +6, with negative values denoting dry spells and positive values indicating wet spells. The trend for positive Palmer Drought indices and fairly high precipitation amounts are shown on the graphs. The report also links to other resources on the WWW dealing with this flooding event and is located at: <http://www.ncdc.noaa.gov/rcsg/dakotaflood/dakotaflood.html>

Spring Nor'Easter/Blizzard Report On-Line

NCDC placed on-line a report on the March 31 - April 1, 1997, nor'easter/blizzard which struck the northeast. Heavy snow and high winds affected a large portion of the Northeast with storm totals reaching one to three feet. The report includes a short narrative, a table of snowfall amounts, a color analysis of the snowfall, and several satellite images. It was placed on-line just four days after the storm occurred and can be accessed via the "What's New" or "What's Hot" pages on NCDC's home page.



♦ Research Customer Service Group Requests

USGS Investigates Landslide/Rainfall Relationships

The United States Geological Survey (USGS) was supplied several Next Generation Weather Radar (NEXRAD) Level III Storm Total Precipitation products from the Medford, Oregon, radar site covering December 20, 1996, through January 2, 1997. The USGS is making landslide assessments and is investigating correlations between precipitation amounts and the extent of the slides. The NEXRAD product continually totals precipitation amounts for each point over the radar's coverage until one hour has lapsed without any additional precipitation being recorded anywhere within the scope's coverage. The Medford area was severely impacted by massive flooding and landslides as a series of Pacific storms pounded the area during late December 1996. The

NEXRAD product will be used to pinpoint areas with extremely heavy precipitation amounts.

Leptospirosis Increase Noted Following Hurricane Hortense

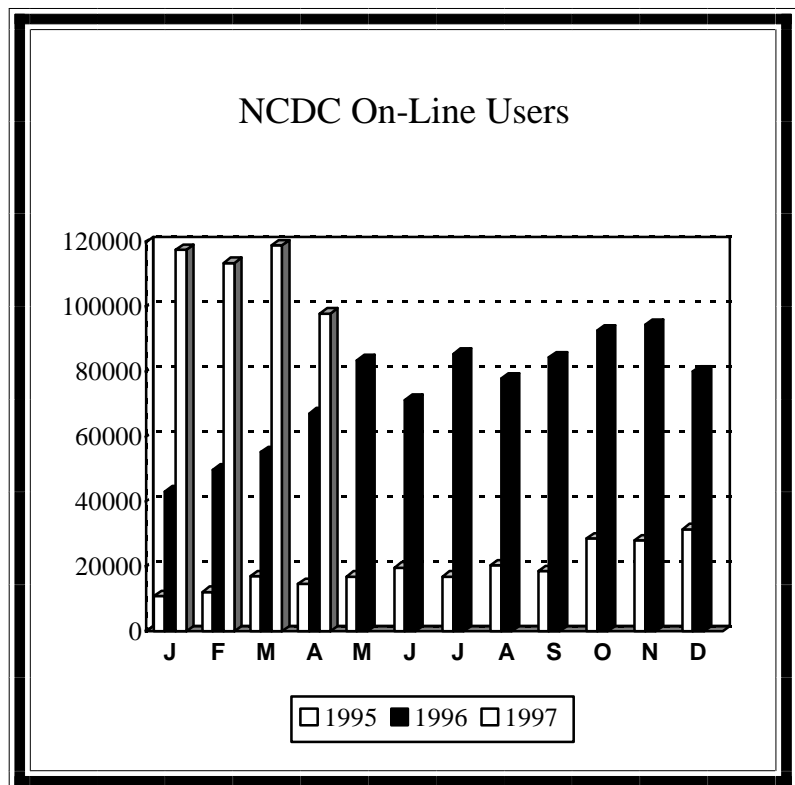
Dr. Eduard Sanders of the Centers for Disease Control received precipitation data for cooperative stations in Puerto Rico for the period August through November 1996. Dr. Sanders is investigating the relationship between increased flooding as a result of Hurricane Hortense and an outbreak of the deadly disease Leptospirosis. Prior to the hurricane, 5 of 72 patients (6.9 percent) tested positive for exposure to the disease, whereas after the hurricane, 18 of 69 patients (26.1 percent) tested positive. Two people died as a result of the infection. In many cases, exposure to flood waters was suspected as the avenue for infection. The data NCDC supplied will be used in an analysis of the outbreak. The utility of surveillance systems in conjunction with rapid laboratory tests to identify emerging health problems was demonstrated. Leptospirosis is treatable with antimicrobial agents and an early diagnosis may reduce mortality.

♦ Satellite Data Requests

Land Use Mapping

Scientists at the Remote Sensing Section of the National Wetland Research Laboratory have begun a project to monitor flood extent and duration, as well as seasonal

changes of wetlands. The researchers hope to improve resource management of stopover habitats for migrating waterfowl along the Mississippi flyway, monitor regional flood events, and identify coarse discrimination of coastal wetland types by mapping the different spring green-up rates. The laboratory plans to accomplish these goals by integrating high temporal resolution satellite image sources with high spatial and spectral resolutions (Thematic Mapper). Their goal is to produce a tool for regional flood monitoring and wetland change.



◆ Requests from News Media

Satellite Imagery Provided for Discovery Channel News Program

An ABC News representative obtained several geostationary satellite images of the recent Pacific Typhoon Isa from NCDC. ABC News produces a science news program titled Discovery News that airs weekly on the Discovery Channel. The program contains a brief earthcast segment that addresses recent geological and meteorological events around the world. Four infrared satellite images of Typhoon Isa on April 17 from Japan's Geostationary Meteorological Satellite (GMS) were provided both electronically and as glossy prints for use in an upcoming broadcast.

The Discovery Channel also contacted the National Climatic Data Center (NCDC) for assistance with a new nature series that it plans to air later this year. One program in the series will be titled Storm Warnings and will focus on four particular hurricanes that hit the United States: Elena and Diana in 1984, Gloria in 1985, and Hugo in 1989. The NCDC supplied glossy Geostationary Operational Environmental Satellite (GOES) images of each storm as it approached the U.S. coast and made landfall.

◆ Interesting Requests

Brain Waves and Brush Strokes

A neurologist working with the Mondal Indian tribe in Oregon contacted NCDC to obtain meteorological data. The researcher is studying the EEG (brain wave activity) of local artists as they ply their crafts in the Alvord Desert in eastern Oregon. There appears to be a fluctuation in the creative process that correlates to the dramatic diurnal temperature changes of the desert. NCDC provided cooperative climate records from the Whitehorse Ranch, Oregon, for the period in question.

Presidential Volunteer Summit

On April 25-27, 1997, a Presidential Volunteer Summit was held in Philadelphia, Pennsylvania, bringing together President and Mrs. Clinton, Vice-President and Mrs. Gore, former presidents and their spouses, and former First Ladies Nancy Reagan and Lady Bird Johnson. The Presidential Summit Committee contacted the National Climatic Data Center (NCDC) to obtain climatological summaries for the past 20 years to be used in preparation of the planned outdoor events. NCDC provided Preliminary Climatological Data for April 1977-1996.

SCIENTIFIC AND PROFESSIONAL ACTIVITIES

◆ Climate and Global Change

Brazil Invitation

Tom Peterson has been invited by Dr. Omar A. Lucero of Brazil to join in an Inter American Institute (IAI) for Global Change Research grant

proposal on an "assessment of climate change on the basin of La Plata river, and of some of its hydrological effects." The La Plata river basin is a huge hydrological system encompassing part of five countries in South America. When funded, Dr. Peterson will serve as a Co-Principal Investigator.

♦ Working Groups/Committees/Meetings

CLIVAR Scientific Steering Group

Tom Karl represented Global Climate Observing System (GCOS) at the Climate Variability Study (CLIVAR) Scientific Steering Group - Sixth Session at the National Research Council. Karl led the discussion on observations for CLIVAR. The suggestion was tabled that CLIVAR nominate representatives to the GCOS panels to ensure CLIVAR science requirements in GCOS design and implementation.

National Research Council (NRC) Subcommittee

John Jensen attended the initial meeting of the National Research Council's Sub-committee on the NWS Cooperative Observation Network Modernization Review held in Boulder, Colorado, March 31-April 1, 1997. Committee members were briefed by invited guests from NCAR, NWS, NESDIS, and the Department of Agriculture. The purpose of this first meeting was to define, in broad terms, the issues and develop a plan to collect detailed information. Three predominant areas emerged: management of the cooperative program, data recording and transmission (quality and timeliness), and instrumentation. The committee went into executive session on Tuesday afternoon to discuss future visits and their planned approach regarding further data collection.

Department of Defense (DOD) Joint Services Climatology Conference

Wayne Faas, Dan Manns, and Neal Lott participated in the DOD Joint Services

Climatology Conference held at the Veatch-Baley Federal Complex in Asheville, North Carolina. NCDC made presentations covering data sets of interest to DOD, on-line services and plans, and CD-ROM products. Mr. Faas and Mr. Lott also took part in working group discussions and formation of action items for the next year. These items included initiation of actions toward creation of integrated DOD-NCDC data bases and creation of a Federal Climate Complex (FCC) Internet home page. In addition, a discussion group web system has been created for follow-on discussions. Finally, a meteorologist with the CIA's Office of Transnational Security and Technology Issues met with several NCDC personnel to discuss utilization of data and possible cooperative arrangements between the CIA and the FCC.

AAG Annual Meeting

Tom Ross, Tim Owen, and John Hughes staffed NCDC's booth at the 93rd Association of American Geographers (AAG) Meeting from April 1-4, 1997, in Fort Worth, Texas. NCDC's home page and Climate Visualization (CLIMVIS) were hits with many of the nearly 3,500 attendees who visited the booth. Over 70 exhibitors were in attendance including the Census Bureau, NOAA/National Ocean Service, Federal Geographic Data Committee, National Science Foundation, and the U.S. Geological Survey. NCDC's presence at the conference was extremely valuable in introducing our services to many educators and researchers.

American Society of Civil Engineers (ASCE) Ice/Snow Loads Meeting

Neal Lott attended the ASCE ice/snow loads committee meeting on April 14, 1997, in Portland, Oregon. The meeting focused on efforts to

complete a national climatology and map of 50-year maximum radial ice thickness from freezing rain by October of this year. A national climatology of this does not currently exist. The new map will be included in the ASCE 7-98 publication next year. The main emphasis of this group is to provide the best and most complete information possible to those concerned with atmospheric icing of structures, such as the communications and utilities industries.

World Wide Web Conference

Steve Fleming attended the 6th International World Wide Web Conference in Santa Clara, California, the week of April 7-11, 1997. Mr. Fleming learned much about current trends in this area as well as future technology. Some of the topics included Secure Socket Layer (SSL) for secure transactions, Secure Electronic Transactions (SET), Cascading Style Sheets (CSS), and Extended Markup Language (XML). He also met with other government webmasters to discuss current issues concerning government web sites.

♦ Publications

Snow Measurements Published

The Carbon Dioxide Information Analysis Center (CDIAC) has released the numerical data package, NDP-059, titled "Daily Snow Depth Measurements from 195 Stations in the United States", by D. R. Easterling, P. Jamason, D. Bowman, P. Hughes, and E. Mason. Publication date was February 1997.

1997 ASHRAE Handbook of Fundamentals (HOF)

NCDC has completed its work for the new weather chapter in the 1997 American Society of Heating, Refrigerating, and Air Conditioning Engineers

(ASHRAE) HOF. NCDC had previously provided 12 years of hourly and daily surface data for approximately 1,500 U.S. and international locations on 7 CD-ROMs to ASHRAE. The data were also provided to a contractor at the University of Kentucky, who developed new ASHRAE heating/cooling design values of temperature and humidity for these cities. These new weather tables will be used by thousands of engineers in the design, development, and implementation of new heating/cooling systems throughout the world. NCDC performed an extensive review of the new tables to ensure their accuracy. The work NCDC invested in this effort has been greatly appreciated and acknowledged by the ASHRAE handbook committee. The 1997 HOF will be published in June.

♦ Interactions with NOAA Line Offices

National Weather Service (NWS) uses NCDC Data and Products as Forecasting Tools

A researcher with the NWS Forecast Office at Rapid City, South Dakota, obtained several NCDC data sets and products to use as forecasting aids. The researcher obtained hourly synoptic data for Gillette, Wyoming, for the 1983 to present period, and also a wind frequency tabulation and wind stratified conditional climatology package. The raw data and the climatological products will be used to relate surface synoptic features with upper level systems. The relationships between these features cause some strong local wind events at Gillette which are difficult forecasting problems. The NCDC data package and climatology should aid in the forecasting process.

Famous Oklahoma Tornado Studied by NWS Office

Forecasters at the National Weather Service Forecast Office (NWSFO) Oklahoma City are working on a research project involving the Woodward, Oklahoma, tornado of April 1947. This tornado was one of the longest, widest, and most destructive to strike that part of the country. It cut a 221 mile path across portions of western Texas, Oklahoma, and Kansas from White Deer, Texas, northeastward to St. Leo, Kansas. The tornado struck Woodward, Oklahoma, at 8:43 p.m. on April 6, 1947, and destroyed much of the northwestern part of the city. In Woodward alone, 95 people were killed, 723 others injured, and property losses in 1947 dollars reached six million. Total losses from the storm over the three-state area were 167 deaths, 983 injuries, and 9.7 million dollars in damage. The National Climatic Data Center provided hourly weather observations for selected locations to help complete the NWS project.

NEXRAD Radar Data and Lightning Study Underway

Researchers at the National Oceanic and Atmospheric Administration's (NOAA) Hurricane Research Division requested Next Generation Weather Radar (NEXRAD) Level II data for several tropical cyclones during the 1995-1996 seasons. The researchers obtained the Level II data from the National Climatic Data Center (NCDC) for the following storms: Allison, Erin, and Opal in 1995, and Bertha and Fran in 1996. The research team is working on a study of lightning entitled: Utilization of Airborne and NEXRAD Data in the Analysis of Cloud-to-Ground Lightning in 1995 and 1996 Tropical Cyclones. Results of the study will be presented at an upcoming tropical storm conference.

EMPLOYEE ACTIVITIES

♦ EEO and Community Outreach

Twenty-Five Children Attend NCDC's Bring a Child to Work Day

Roger Winchell and Karol Pittman organized NCDC's first "Bring a Child to Work Day" held on April 24, 1997. Approximately 25 children attended with their sponsors: parents, grandparents, neighbors, and tutors. The participants were greeted by Dr. Hadeen and received an exciting severe weather demonstration by Grant Goodge. In addition, the children were

given a tour of the Center by William Brown, Mark Lackey, Elaine Mason, and Tom Ross.

Civil Rights

Katherine Fincher attended the Department of Commerce First Annual Civil Rights Conference on April 7-9, 1997, in Washington, DC. The meetings were sponsored by the DOC Office of Civil Rights and covered such topics as Equal Employment Opportunity (EEO), Affirmative Action (A/A), Diversity, Interest-Based Negotiations, Accommodating People with

Disabilities, Human Resources and EEO, and Effective EEO Counseling. Presenters and panelists were from the IRS, the USDA, the Department of Justice, the U.S. Civil Rights Commission, and the DOC. There was consensus that Affirmative Action is not a program of the past, a glass ceiling exists, diligence is still required to ensure that discrimination does not occur, and that the workforce should reflect the population it serves. EEO, A/A, and Diversity need to be integral parts of the way business is done in order to improve morale, increase productivity, decrease dissention, and reduce costs.

NCDC Participant in School's Occupational Fair

On April 30, 1997, Tom Ross, NCDC's Climate Applications Branch, participated in Claxton schools Occupational Fair. Individuals from over 50 different careers/occupations were present and gave presentations to the students on what is involved in becoming a professional in their field. Mr. Ross discussed his role as a meteorologist and gave the students information about the different options available in the meteorology field.

♦ Training

Diversity Workshop

Rob Quayle, Debi Braun, Theresa Metcalf and Al Wallis attended the NOAA Diversity Workshop, Focus on People with Disabilities, held in

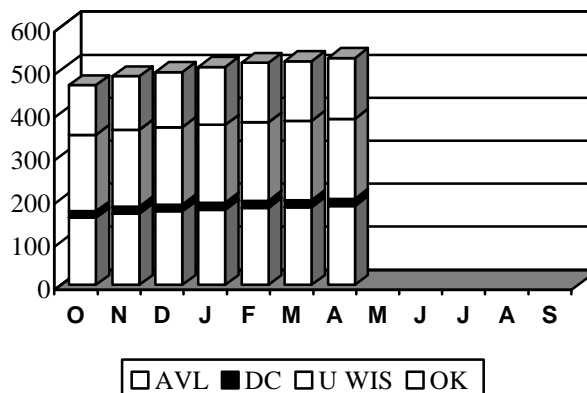
Philadelphia, Pennsylvania. Mr. Wallis submitted a discussion item addressing the need for managers to identify the most reasonably, convenient work locations near emergency exits for personnel physically restricted in their movements. The objective of the discussion was to raise awareness that expeditious evacuation procedures that minimizes the handling of physically restricted individuals reduces the danger to them and their co-workers. Helen Mitchell, the DOC Disability Program Manager, endorsed the approach and recommended adoption of this issue in the written report of the workshop.

Personnel Management Demonstration Project

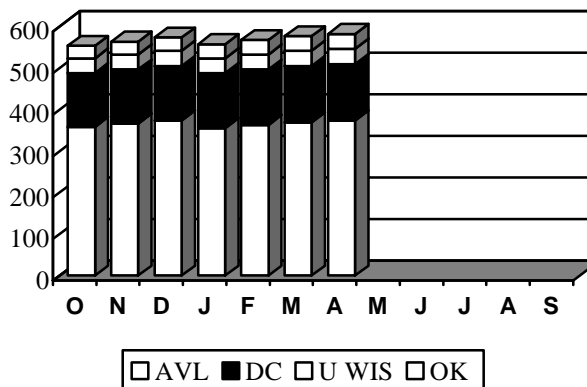
Personnel from the Mountain Administrative Support Center and the National Environmental Satellite, Data, and Information Services were on-site at the NCDC April 15, 1997, to conduct briefings on the Personnel Management Demonstration Project. These briefings acquainted employees with the different project systems--from classification to pay administration to performance management. The Center as well as other Department of Commerce organizations will begin participating in the demonstration project in October of this year.

NCDC Data Volumes

Total
Archive
(Terabytes)



Total
Archive
(Kilo Media)



Monthly
Activity
(FY 97)

